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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,926	08/08/2001	Amir Said	10018297-1	3679

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HEWLETT-PACKARD COMPANY
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EXAMINER

FERRIS III, FRED O

ART UNIT	PAPER NUMBER
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2128

DATE MAILED: 02/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/924,926

Applicant(s)

SAID, AMIR

Examiner

Fred Ferris

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/02/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

1. *Claims 1-23 have been presented for examination based on applicant's disclosure filed on 8 August 2001. Claims 1-23 have been rejected by the examiner.*

Specification

2. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

MPEP § 608.01(b) recites the following:

“GUIDELINES FOR THE PREPARATION OF PATENT ABSTRACTS

A. Background

The Rules of Practice in Patent Cases require that each application for patent include an abstract of the disclosure, 37 CFR 1.72(b).

The content of a patent abstract should be such as to enable the reader thereof, regardless of his or her degree of familiarity with patent documents, to determine

Art Unit: 2128

quickly from a cursory inspection of the nature and gist of the technical disclosure and should include that which is new in the art to which the invention pertains.

B. Content

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains.

If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure.

If the patent is in the nature of an improvement in old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement.

In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or a use thereof.

If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following: (1) if a machine or apparatus, its organization and operation; (2) if an article, its method of making; (3) if a chemical compound, its identity and use; (4) if a mixture, its ingredients; (5) **if a process, the steps**. Extensive mechanical and design details of apparatus should not be given.

With regard particularly to chemical patents, for compounds or compositions, the general nature of the compound or composition should be given as well as the use thereof, e.g., "The compounds are of the class of alkyl benzene sulfonyl ureas, useful as oral anti-diabetics." Exemplification of a species could be illustrative of members of the class. For processes, the type reaction, reagents and process conditions should be stated, generally illustrated by a single example unless variations are necessary."

The abstract of the disclosure is therefore objected to because a skilled artisan would not be able to determine the nature and gist of the technical disclosure or that which is new in the art from the brief content of the abstract. Correction is required.

Incorporation by Reference

3. *The attempt to incorporate subject matter into this application by reference to Attorney docket no. PDNO 10006298-1 is improper because only US Patents and U.S. Patent Applications may be incorporated by reference.*

Art Unit: 2128

MPEP 608.01(p) [R-2] (Completeness) recites the following:

"A. Review of Applications Which Are To Issue as Patents.

An application as filed must be complete in itself in order to comply with 35 U.S.C. 112.

Material nevertheless may be incorporated by reference, Ex parte Schwarze, 151

USPQ 426 (Bd. Ape. 1966). An application for a patent when filed may incorporate

*"essential material" **by reference to (1) a U.S. patent, (2) a U.S. patent application publication, or (3) a pending U.S. application,** subject to the conditions set forth below.*

"Essential material" is defined as that which is necessary to (1) describe the claimed invention, (2) provide an enabling disclosure of the claimed invention, or (3) describe the best mode (35 U.S.C. 112). In any application which is to issue as a U.S. patent, essential material may not be incorporated by reference to (1) patents or applications published by foreign countries or a regional patent office, (2) non-patent publications, (3) a U.S. patent or application which itself incorporates "essential material" by reference, or (4) a foreign application."

Drawings

4. Applicant's drawings submitted on 8 August 2001 have been approved by the examiner.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. ***Claims 1-23 are rejected under 35 U.S.C. 112, first paragraph, as based on a single means and are therefor nonenabling for the scope of the claim.***

In accordance with MPEP section 2164.08(a) these claims are subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph as reciting only a single means (step). MPEP § 2164.08(a) recites the following:

2164.08(a) Single Means Claim

*A single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is **subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph**. In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983) (A single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor.). When claims depend on a recited property, a fact situation comparable to Hyatt is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor.*

In this case, independent claims 1, 13, and 23 recite a method, apparatus, and article for identifying predominate color in a digital image with the single means of “applying a detection rule to randomly-selected pixels in the image”. This single means is nonenabling for the scope of the claim since it is not in combination with any additional means (steps) and, hence, can be interpreted as encompassing every conceivable means for achieving the claimed limitation. Dependent claims 2-12, and 14-22 inherit this defect.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 13, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 6,480,627 issued to Mathias et al.

Independent claim 1, 13, and 23 merely recite a method, apparatus, and article for identifying predominate color in a digital image by the single limitation of “applying a

Art Unit: 2128

detection rule to randomly-selected pixels in the image". Mathias teaches techniques for detecting the predominate color in a digital image (CL4-L9-19) by applying rules (CL2-L5-15, CL5-L55-63) to randomly selected pixels (CL6-L37-41, i.e. the algorithm is a "rule" which evolves to randomly select pixels) in an image within an image classification system (Abstract, Summary of Invention, Figs. 2,3).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 2 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,480,627 issued to Mathias et al in view of U.S. Patent 5,933,253 issued to Ito et al.

As previously cited above, Mathias discloses the elements of the claimed limitations of independent claims 1 and 13. Specifically, Mathias teaches techniques for

Art Unit: 2128

detecting the predominate color in a digital image (CL4-L9-19) by applying rules (CL2-L5-15, CL5-L55-63) to randomly selected pixels (CL6-L37-41, i.e. the algorithm is a "rule" which evolves to randomly select pixels) in an image within an image classification system (Abstract, Summary of Invention, Figs. 2,3).

Mathias does not explicitly teach detection of straight line (strip) segments of pixels in a digital image.

Per dependent claims 2 and 14: Ito discloses the detection/generation of straight line segments of pixels (i.e. a "strip" of selected pixels) in a color digital image. (See: Abstract, CL3-L7-23)

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Mathias relating to detecting the predominate color in a digital image by applying rules, with the teachings of Ito relating to detection of straight line segments (strip) of pixels, to realize the claimed invention. An obvious motivation exists since this area of technology is highly competitive with many color image compression techniques available in the market place and large amounts of money being spent in product development and improvement (See Mathias, Background/Summary). Accordingly, a skilled artisan would have made an effort to become aware of what capabilities had already been developed in the market place, and having access to the teachings of Mathias and Ito, would have knowingly modified the teachings of Mathias with the teachings of Ito in order to reduce development time and cost.

Per dependent claims 6-10 and 18-22: These claims merely require creating a color list by sampling the image pixel colors and adding the color to the list and subsequently incrementing the list counter. The use of "lists" and "counters" is very well known in the art and would have knowingly been incorporated by a skilled artisan, using the reasoning previously cited above, as a method of maintaining a data structure of color image pixels. (See definition: "list" – a multi-element data structure allowing elements to be added and removed in any order, "counter" - used to keep count of elements, Microsoft Computer Dictionary, 1997)

Per dependent claims 11-12: These claims merely recite the use of a sorted list and hash table in maintaining the color occurrence list. Sorted lists and hash tables are also very well known in the art and would have knowingly been incorporated by a skilled artisan, using the reasoning previously cited above, as a method of maintaining a data structure list of color image pixels. (See definition: "sort" – to organize data in a particular order, "hash table" – mapping numerical values into values corresponding data in a structure such as a table, Microsoft Computer Dictionary, 1997)

8. Claims 3 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,480,627 issued to Mathias et al in view of "MPEG-4: an object-based multimedia coding standard supporting mobile applications", A. Puri et al, Mobile Networks and Applications 3, 1998.

As previously cited above, Mathias discloses the elements of the claimed limitations of independent claims 1 and 13. Specifically, Mathias teaches techniques for

Art Unit: 2128

detecting the predominate color in a digital image (CL4-L9-19) by applying rules (CL2-L5-15, CL5-L55-63) to randomly selected pixels (CL6-L37-41, i.e. the algorithm is a "rule" which evolves to randomly select pixels) in an image within an image classification system (Abstract, Summary of Invention, Figs. 2,3).

Mathias does not explicitly teach detection of straight line segments of pixels in a digital image.

Mathias does not explicitly disclose a detection rule that minimizes the probability of the outcome.

Per dependent claims 3 and 15: Puri teaches an image compression method inclusive of the use of rules (pp. 23, Section 5.2) and coding (compression) based on probability (pp. 15, paragraph 1, Section 4.2.1) for indexing exceptions (i.e. outcome, positive and negative) when driving encoding tasks (compression algorithms) to be applied to a compressed image.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Mathias relating to detecting the predominate color in a digital image by applying rules, with the teachings of Puri relating to minimizing the coding (compression) based on the probability of the outcome, to realize the claimed invention. An obvious motivation exists since this area of technology is highly competitive with many color image compression techniques available in the market place and large amounts of money being spent in product development and improvement (See Mathias, Background/Summary). Accordingly, a skilled artisan would have made an effort to become aware of what capabilities had

Art Unit: 2128

already been developed in the market place, and having access to the teachings of Mathias and Puri, would have knowingly modified the teachings of Mathias with the teachings of Puri in order to reduce development time and cost.

Allowable Subject Matter

9. *Claims 4-5 and 16-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and providing that issues relating the 112(1) rejections and any informalities noted above are resolved.*

In particular, the prior art does not disclose the specific arrangement of elements of a method and apparatus relating to the probability of identifying a color having $r_c < r_a$ / $r_c > r_a$ as a predominant color, where r_c is number of pixels in a sample region having a specific color divided by the total number of pixels in the sample region, and r_a/r_d is an acceptable/desirable ratio as recited in dependent claims 4-5 and 16-17.

Conclusion

10. *The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Careful consideration should be given prior to applicant's response to this Office Action.*

"Image Compression Using the Spatial-Orientation Tree", A. Said et al, IEEE 0-7803-1254-6/93, IEEE 1993 teaches lossy color image compression.

Art Unit: 2128

*"An Image Multiresolution representation for Lossless and Lossy Compression",
A. Said et al, IEEE Transactions on Image Processing, Vol. 5, No. 9, September 1996
teaches lossy color image compression.*

*"A Genetic Approach to Color Image Compression", H. Feiel, ACM 0-89791-850-
9, ACM 1997 teaches lossy color image compression.*

*Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Fred Ferris whose telephone number is 571-272-3778
and whose normal working hours are 8:30am to 5:00pm Monday to Friday. Any inquiry
of a general nature relating to the status of this application should be directed to the
group receptionist whose telephone number is 571-272-3700. If attempts to reach the
examiner by telephone are unsuccessful, the examiner's supervisor, Jean Homere can
be reached at 571-272-3780. The Official Fax Number is: (703) 872-9306*

Fred Ferris, Patent Examiner
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January 26, 2005

Fel Ferris
to 2128